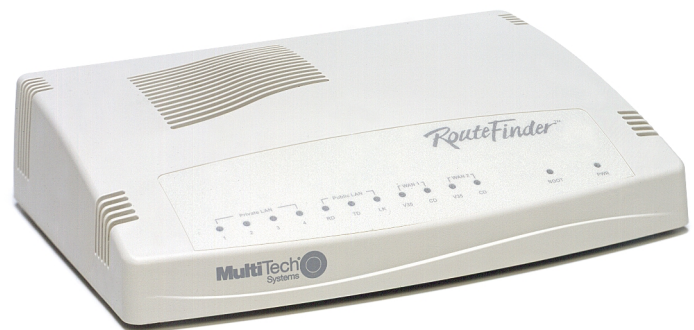

*RouteFinder*TM

**Model RF500S
Broadband Router**



Quick Start Guide



Quick Start Guide

Broadband Router

PN S000127D Revision D

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Revision	Date	Description
A	10/09/00	Updated for release with MTS case. All pages at software Version 7.12
B	10/26/01	Updated to include a section on "Web Browser Configuration and Management" and minor edits. Added warranty section. All pages at software Version 7.26
C	01/03/02	All pages at software Version 7.29
D	07/16/02	Changed the graphics showing the back of the RF500S.

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Record Router Information

Model Number: _____

Serial Number: _____

Technical Support

Country	By Email	By Phone
France:	support@multitech.fr	+(33) 1-64 61 09 81
India:	support@multitechindia.com	+91 (124) 6340778
U.K.:	support@multitech.co.uk	+(44) 118 959 7774
U.S. and Canada:	support@multitech.com	(800) 972-2439
Rest of the World:	support@multitech.com	+(763) 717-5863

World Headquarters

Multi-Tech Systems, Inc.

2205 Woodale Drive

Mounds View, Minnesota 55112

(763) 785-3500 or (800) 328-9717

Fax (763) 785-9874

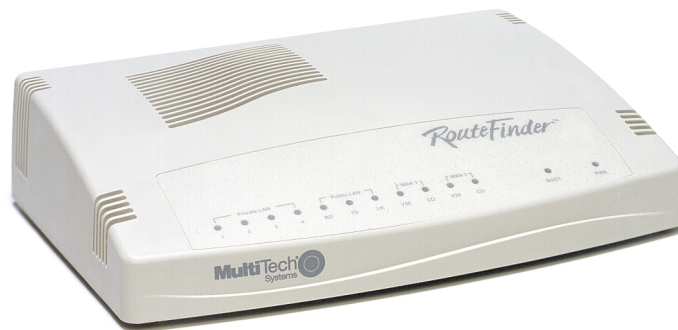
Internet Address: <http://www.multitech.com>

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Introduction

The Multi-Tech Broadband RouteFinder connects a cable modem or DSL modem to an Ethernet LAN to provide high-speed broadband access to the Internet for up to 253 users. The Broadband Router features a built-in 4-port 10/100M bps switch, one asynchronous port for backup Internet access or dial-in remote access, firewall services, and network security. This product is ideal for any business looking for cost-effective broadband access to the Internet for every user on the LAN or for the home user looking to share their DSL cable connection.



The RouteFinder RF500S

Related Documentation

This guide is intended to be used by systems administrators and network managers. It provides the information for a qualified person to unpack, cable, install software, and configure the device for proper operation.

User Guide

A detailed User Guide in Adobe Acrobat PDF format is provided on the System CD included in your RouteFinder package. The User Guide provides in-depth information on the features and functions available on your router. It also includes the product warranty statement, software user license agreement, ordering accessories, regulatory compliance, tools for your RF500S, cabling diagrams, a glossary, and sections on troubleshooting and frequently asked questions. The User Guide can be displayed using Adobe Acrobat Reader. You can save the .pdf file to your PC or print a copy.

Adobe Acrobat Reader

Adobe Acrobat Reader is a free program used to view documents created in Adobe PDF format. Adobe Acrobat Reader can be installed from the System CD (click on the Install Manuals option and select Install Adobe Acrobat Reader) or downloaded from Adobe's Web site at:

<http://www.adobe.com>

Hardware Installation

Safety Warnings

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in a wet location unless the jack is specifically designed for wet locations.
3. This product is to be used with UL and cUL listed computers.
4. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
5. Avoid using a telephone during an electrical storm. There may be a remote risk of electrical shock from lightening.
7. Do not use the telephone to report a gas leak in the vicinity of the leak.
8. To reduce the risk of fire, use only No. 26 AWG or larger Telecommunications line cord.
9. Use only the power source supplied with your product or an equivalent power source supplying the minimum power requirements.

Unpacking Your RouteFinder

The RF500S shipping box contains the following items:

- System CD
- Power Supply
- The RouteFinder RF500S
- This Quick Start Guide
- A serial cable

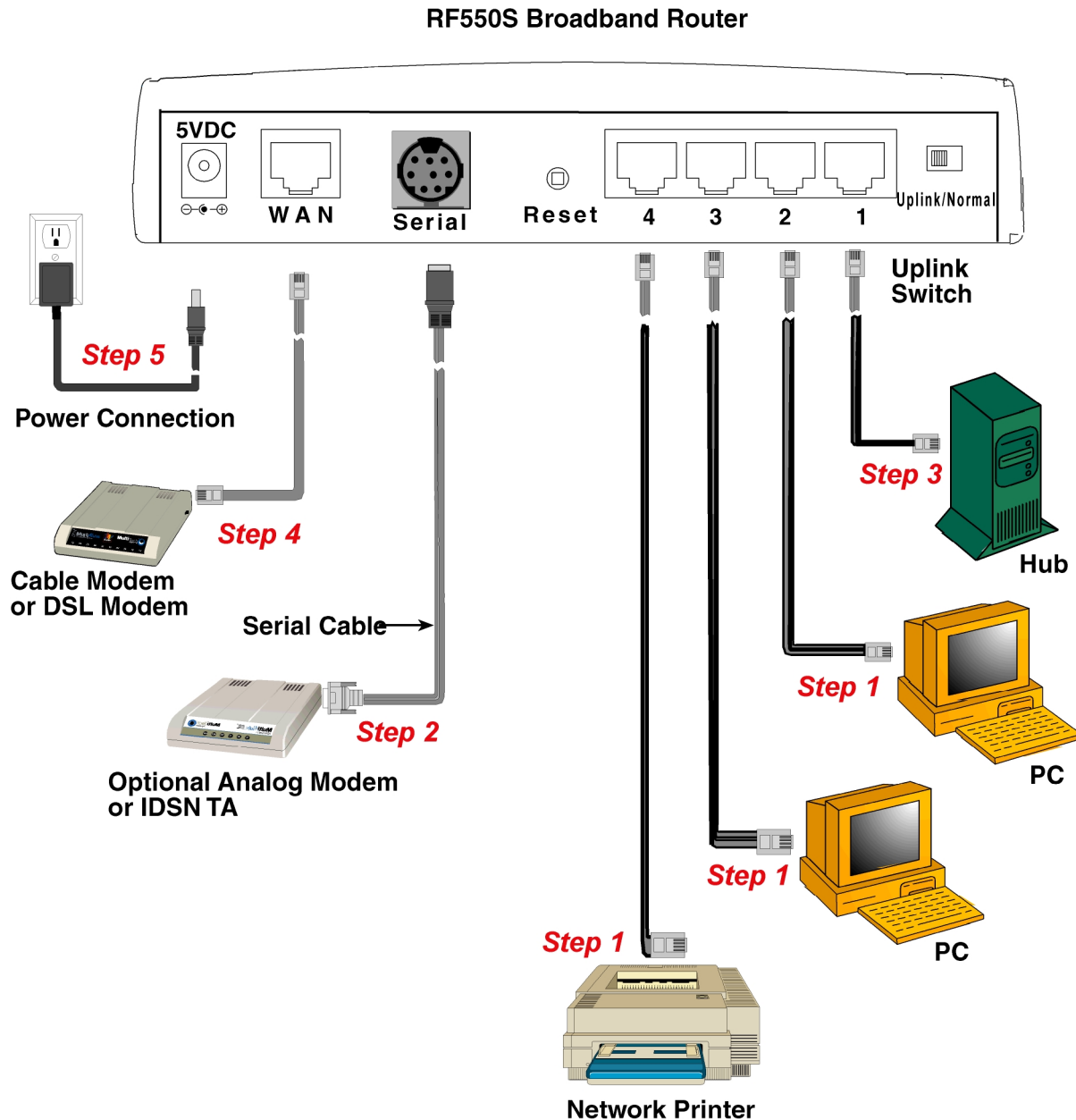
If any item is missing or damaged, please contact Multi-Tech Systems.

Requirements

- Intel 486 or higher processor.
- 10/100 BaseT cable to connect the RF500S to the network.
- One DSL or Cable Modem.
- A networked computer with Windows 95/98/2000, Windows NT 3.5 or higher and TCP/IP protocol installed, (or a non-Windows system with TCP/IP properly installed to enable Telnet configuration).
- Any Windows communication application for Dial-Out operation.
- Any PPP supported communication application for Dial-In operation.
- TCP/IP installed and configured on each PC accessing the Internet.

Cabling Your RouteFinder

Cabling your RouteFinder requires making the appropriate connections to PCs, Cable or DSL modem, analog modem or ISDN TA (optional), AC power and the RouteFinder. Then, after your device is properly cabled, you will have to configure your RouteFinder. Follow the instructions provided in the Web Browser Configuration and Management section of this Quick Start Guide.



Cabling Directions

Before beginning, turn the power off on all network devices (PCs, Cable/DSL modems, analog modems, ISDN TAs, and the router).

1. Connect the Ethernet port of each PC or network device to one of the 4 LAN ports.

Important: If you are using the Uplink option, Port Number 1 cannot be used as a LAN port).

2. If you are using an analog modem, connect it to the Serial Async port.
3. If you are using the Uplink option to connect to another network segment, slide the **Uplink/Normal** switch into the Uplink position. Connect the LAN cable to LAN Port Number 1. Plug the other end of the LAN cable into another hub, router, or switch.

Note: If you are not using the Uplink feature, place the switch in the Normal position.

4. Connect a network cable from the cable or DSL modem to the 10 BT WAN port.
5. Connect the provided power supply cable to the 5VDC power port on the back of the router. Plug the power supply into an AC power outlet as shown above.

Power and Reset Button

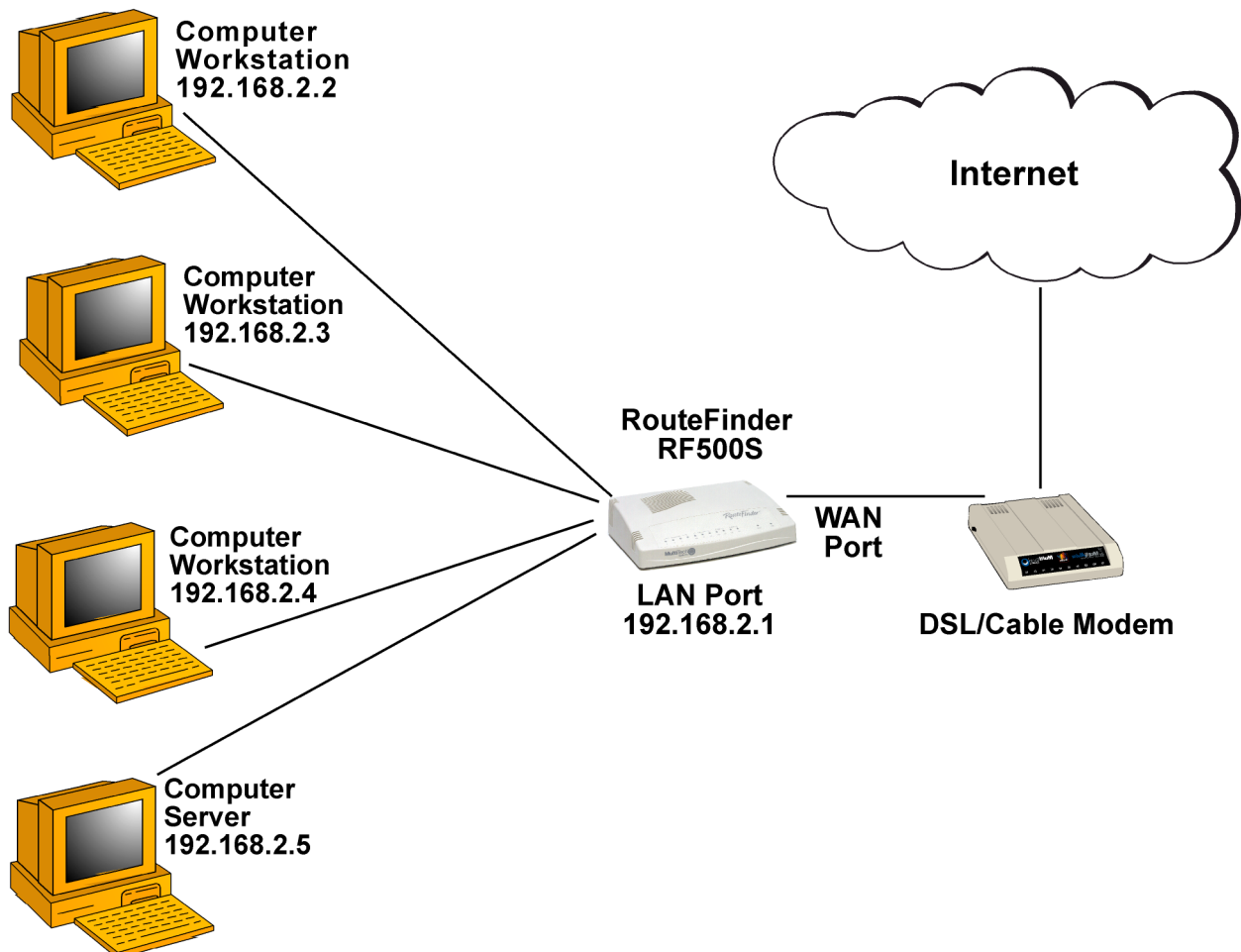
1. Power on your cable or DSL modem.
2. If you are using an analog modem or ISDN TA, power on the device.
3. Press and hold the RouteFinder's Reset button for 3 seconds to restore the default settings.

Application Examples

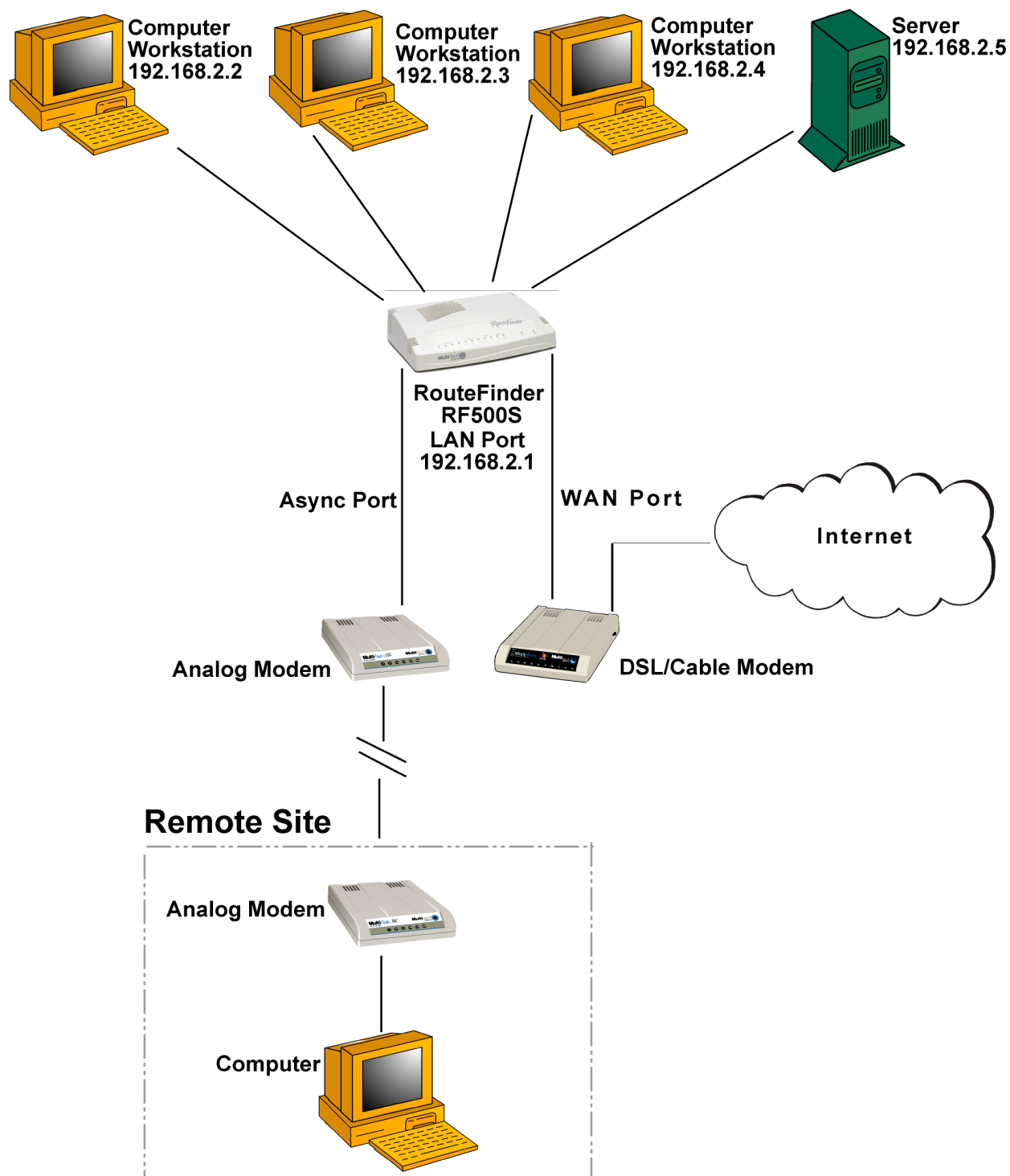
The following examples provide information about RF500S typical applications. The three examples include:

1. Connecting a local LAN to Internet.
2. Connecting a local LAN to the Internet and setting up a remote site.
3. Setting up a LAN to LAN via the Async Port.

Example 1 – Connecting a Local LAN to the Internet

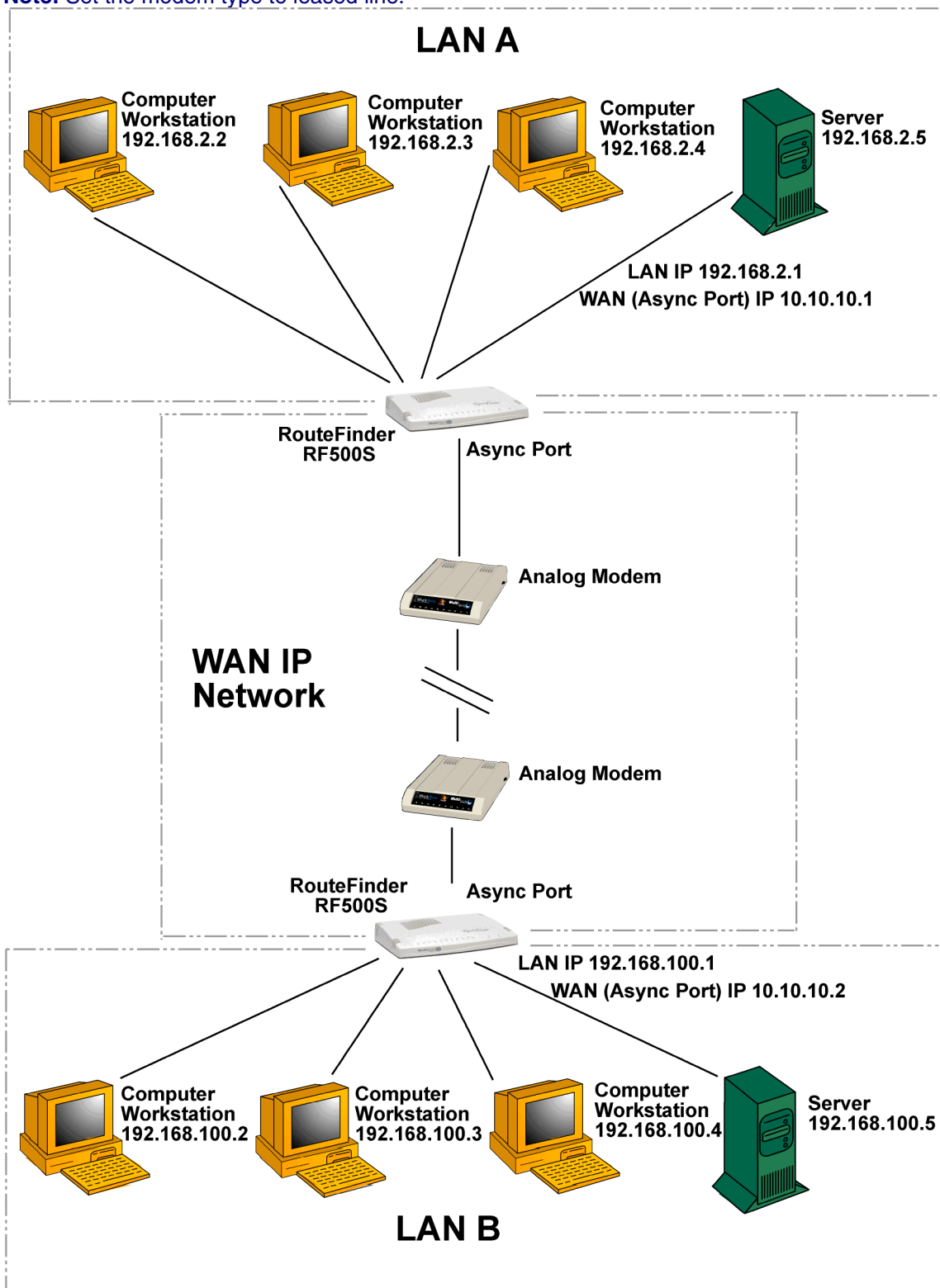


Example 2 – Local LAN to the Internet / Remote Site



Example 3 – LAN to LAN via an Async Port

Note: Set the modem type to leased line.



See the Complete User Guide for Example 3 Setup Directions

Configuration and Management

The RF500S can be configured and managed using one of two methods.

1. Launch your Web browser and type the device IP address <http://192.168.2.1> in the browser address box. This IP address is the default value of your gateway. Press **Enter**. The RouteFinder wizard main screen displays.

This Quick Start Guide walks you through the Web browser method of configuring and managing your RF500S.

OR

2. Install the Multi-Tech software, which consists of the RouteFinder Setup Wizard, the RouteFinder Manager, and the RouteFinder Monitor.

This method of configuring and managing your RF500S is documented in the complete User Guide. The software is included on the system CD packaged with your RouteFinder.

Configure and Manage Using a Web Browser

Launch your Web browser and type the device IP address **http://192.168.2.1** in the browser's address box. This IP address is the default value of your gateway. Press **Enter**.

Note: Make sure your PC's address is in the same network as the router's. In Windows 95/98/Me you can type **WINIPCFG**. In Windows 2000/NT, you can type **IPCONFIG**.

The main menu displays. It contains the setup, configuration, management, and display functions for your RouteFinder and home Internet gateway.



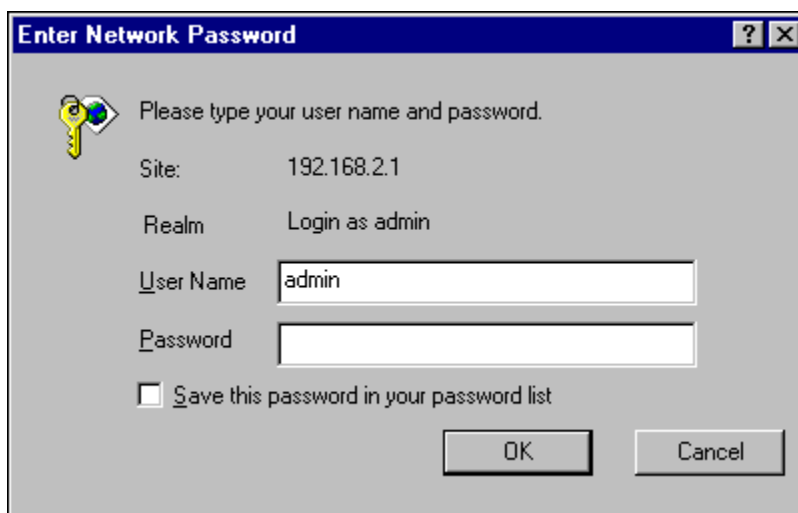
Setup Wizard

SETUP WIZARD

To access, click the **Setup Wizard** button on the main screen.

The **Setup Wizard** is a step-by-step process for configuring your RouteFinder.

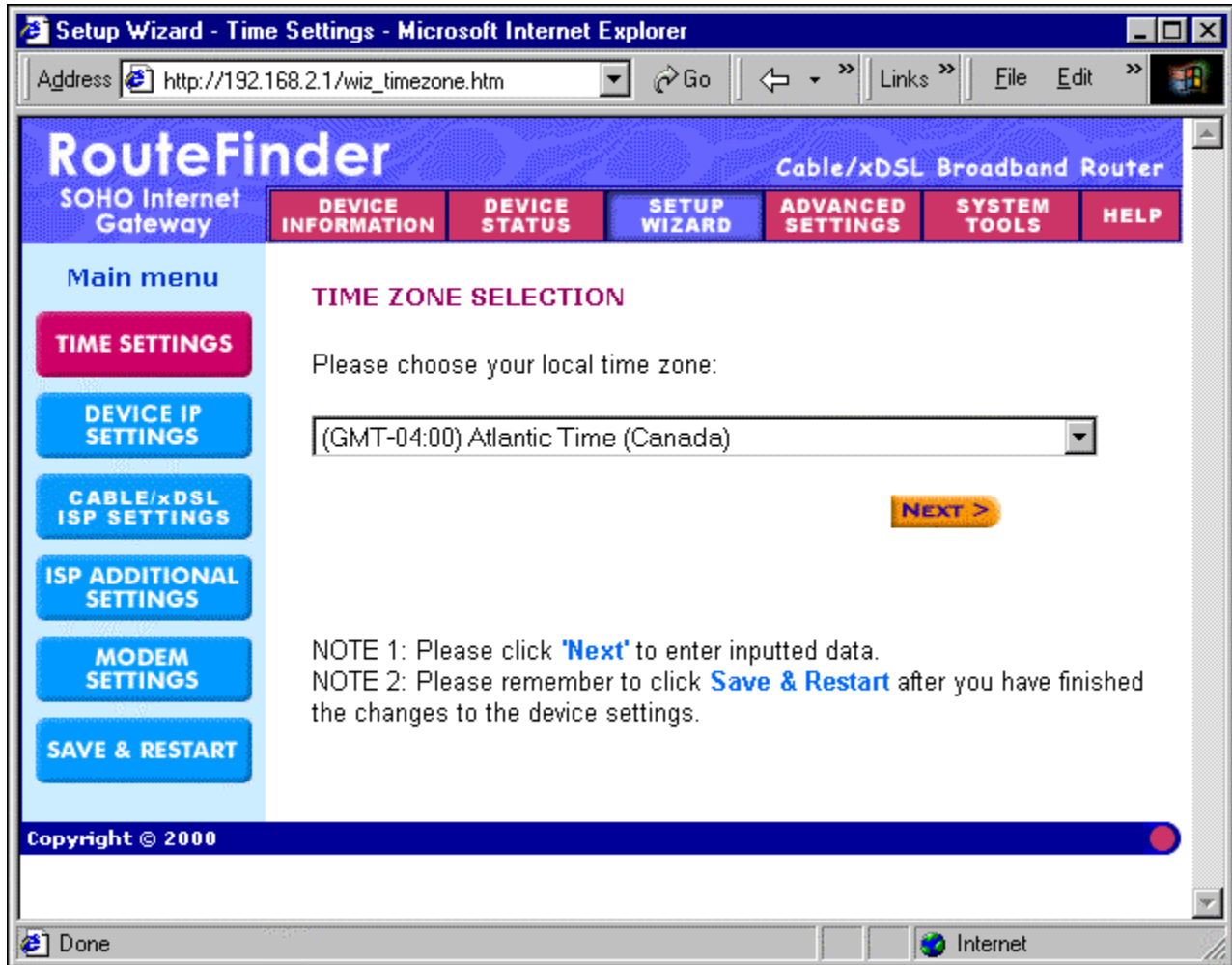
The **Enter Network Password** screen displays. Type **admin** (the default user name) in the user name box and leave the password box empty. Click **OK**.



The image shows a Windows-style dialog box titled "Enter Network Password". It has a blue title bar with a question mark icon and a close button. The main area is light gray. At the top left is a yellow key icon. To its right is the text "Please type your user name and password." Below this are four labels with corresponding input fields: "Site:" with the value "192.168.2.1", "Realm" with the value "Login as admin", "User Name" with the value "admin", and "Password" with an empty field. Below these fields is a checkbox labeled "Save this password in your password list" which is currently unchecked. At the bottom right are two buttons: "OK" and "Cancel".

Note: For information on how to change your password, see the ISP Additional Settings section.

The **Setup Wizard** screen then displays.

**SETUP WIZARD****– Time Zone Selection**

Choose the local time zone (see screen above). Select the time zone, and then click the **Next** button to continue. You can also click the buttons on the left side of the screen. These buttons are useful when you want to change the information on individual screens or to choose your own setup order.

**SETUP
WIZARD****– Device IP Settings**

You must set your Internet gateway an IP address on your network. This is **not** the IP address from your ISP but the local internet LAN IP address. The IP address 192.168.2.1 is the default value of your gateway.

Device IP Address

The internal LAN IP address of your Internet gateway.

Device IP Subnet Mask

The subnet mask can usually be left as its default entry 255.255.255.0

The screenshot shows a web browser window titled "Setup Wizard - Device IP Settings - Microsoft Internet Explorer". The address bar shows "http://192.168.2.1/wiz_dipsettings.htm". The page has a blue header with "RouteFinder" and "Cable/xDSL Broadband Router". Below the header is a navigation bar with buttons: "DEVICE INFORMATION", "DEVICE STATUS", "SETUP WIZARD" (highlighted), "ADVANCED SETTINGS", "SYSTEM TOOLS", and "HELP". On the left is a "Main menu" with buttons: "TIME SETTINGS", "DEVICE IP SETTINGS" (highlighted), "CABLE/xDSL ISP SETTINGS", "ISP ADDITIONAL SETTINGS", "MODEM SETTINGS", and "SAVE & RESTART". The main content area is titled "DEVICE IP SETTINGS" and "The device IP address and subnet Mask settings". It contains two rows of input fields: "IP Address: 192 . 168 . 2 . 1" and "IP Subnet Mask: 255 . 255 . 255 . 0". Below these are "< BACK" and "NEXT >" buttons. A note at the bottom says "NOTE: Please click 'Next' to enter inputted data." The footer shows "Copyright © 2000" and a status bar with "Internet".

Setup Wizard - Device IP Settings - Microsoft Internet Explorer

Address http://192.168.2.1/wiz_dipsettings.htm Go Links File Edit

RouteFinder Cable/xDSL Broadband Router

SOHO Internet Gateway

DEVICE INFORMATION DEVICE STATUS **SETUP WIZARD** ADVANCED SETTINGS SYSTEM TOOLS HELP

Main menu

TIME SETTINGS

DEVICE IP SETTINGS

CABLE/xDSL ISP SETTINGS

ISP ADDITIONAL SETTINGS

MODEM SETTINGS

SAVE & RESTART

DEVICE IP SETTINGS

The device IP address and subnet Mask settings

IP Address: 192 . 168 . 2 . 1

IP Subnet Mask: 255 . 255 . 255 . 0

< BACK NEXT >

NOTE: Please click 'Next' to enter inputted data.

Copyright © 2000

Internet

SETUP WIZARD**– Cable/xDSL ISP Settings**

If you would like to establish Cable/xDSL ISP settings, you have to enable this function by configuring this screen. Some ISPs may give you Static IP settings. If this is the case for your ISP, then you need to:

Enter the IP address that is assigned by your ISP.

Enter the IP subnet mask.

Enter the ISP gateway address.

Enter the DNS IP address.

Setup Wizard - Cable/xDSL ISP Settings - Microsoft Internet Explorer

Address http://192.168.2.1/wiz_ispsettings.htm Go Links File Edit

RouteFinder

Cable/xDSL Broadband Router

SOHO Internet Gateway

DEVICE INFORMATION DEVICE STATUS **SETUP WIZARD** ADVANCED SETTINGS SYSTEM TOOLS HELP

Main menu

TIME SETTINGS

DEVICE IP SETTINGS

CABLE/xDSL ISP SETTINGS

ISP ADDITIONAL SETTINGS

MODEM SETTINGS

SAVE & RESTART

CABLE/xDSL ISP SETTINGS

☐ Your ISP requires you to input IP settings

IP assigned by your ISP: 0 . 0 . 0 . 0

IP Subnet Mask: 255 . 255 . 255 . 0

ISP Gateway Address: 0 . 0 . 0 . 0

Domain Name Server (DNS) IP Address: 200 . 167 . 20 . 4

< BACK NEXT >

NOTE: Please click 'Next' to enter inputted data.

Internet

**SETUP
WIZARD****– ISP Additional Settings (PPPoE Settings)**

Some ISPs use this protocol for authentication purposes. If applicable:

Enter the **User Name** and the **Password** of your ISP account.

To verify your password, **Retype the Password** of your ISP account.

Some ISPs require additional information; if this is the case:

Enter the **Host Name** to authenticate the user.

Enter the LAN card **MAC address**.

Note: Some ISPs may recognize your LAN card MAC address as a legal user.

In this case, copy the LAN card MAC address in the MAC address field.

For Windows 95/98, run **WINIPCFG** to see the LAN card MAC address.

For Windows 2000/NT, run **IPCONFIG/ALL** for the LAN card MAC address.

SETUP WIZARD**– Modem Settings**

A modem can be used as a dialup backup to the Cable/xDSL connection. If you would like to use a modem backup, enable the modem settings function. Check the **Dialup Modem When Cable/xDSL Is Not Connected** box. Then input the ISP account settings.

Note: If you change the baud rate settings, please check the initial string. (You can refer to your modem manual or TA.)

RouteFinder Cable/xDSL Broadband Router

SOHO Internet Gateway

DEVICE INFORMATION **DEVICE STATUS** **SETUP WIZARD** **ADVANCED SETTINGS** **SYSTEM TOOLS** **HELP**

Main menu

TIME SETTINGS

DEVICE IP SETTINGS

CABLE/xDSL ISP SETTINGS

ISP ADDITIONAL SETTINGS

MODEM SETTINGS

SAVE & RESTART

MODEM SETTINGS

☒ **Dialup Modem When Cable/xDSL is not connected**

ISP Phone Number:

User Name:

Password:

Retype Password:

Idle Time:

< BACK **NEXT >**

NOTE 1: Please click 'Next' to enter inputted data.
NOTE 2: Most modems are compatible with standard modem strings. But few modems or ISDN TAs may need special modem string settings. To setup these special modem strings. Please goto Modem Settings in the Advanced Settings.

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SETUP WIZARD**– Save and Restart**

After you have finished making all the changes on the various pages, click **Save & Restart** to save the settings and restart the device. After restarting, the device will function according to the saved settings.

During the save and restart process, system messages will let you know that you have successfully configured the settings for the device and saved the settings.

During the startup process, the LEDs of the device will blink. Please **wait** until the blinking of the device stops before proceeding.

Device Information

DEVICE INFORMATION

Click the **Device Information** button on the main screen. The **Device Information** screen displays the current settings of the RF500S.

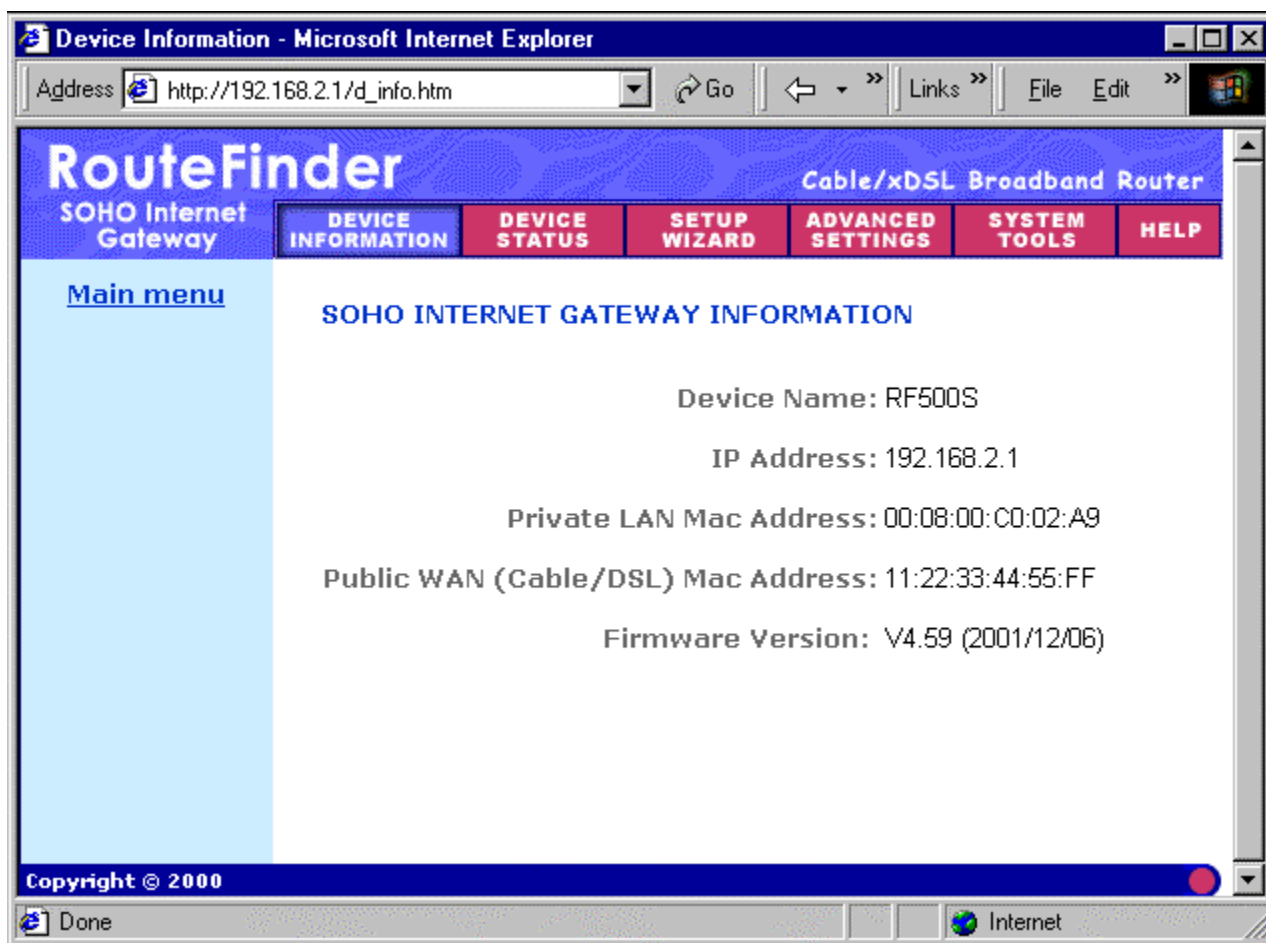
Device Name – The host name of the Internet gateway.

IP Address – The IP address of the Internet gateway.

Private LAN Mac Address – The Mac address of the Internet gateway LAN Ethernet port. This address cannot be changed; it is assigned by Multi-Tech.

Public WAN (Cable/xDSL) Mac Address – The Mac Address of the WAN Ethernet port. This address cannot be changed; it is assigned by Multi-Tech.

Firmware – The current firmware's version number and its release date.



Device Status

DEVICE STATUS

To access this screen, click the **Device Status** button.

The **Device Status** screen displays the status of the current connection.

WAN Ethernet – Describes the current connection status of the Cable/xDSL Modem. Example: When connected, a message **Cable/xDSL: Active** displays.

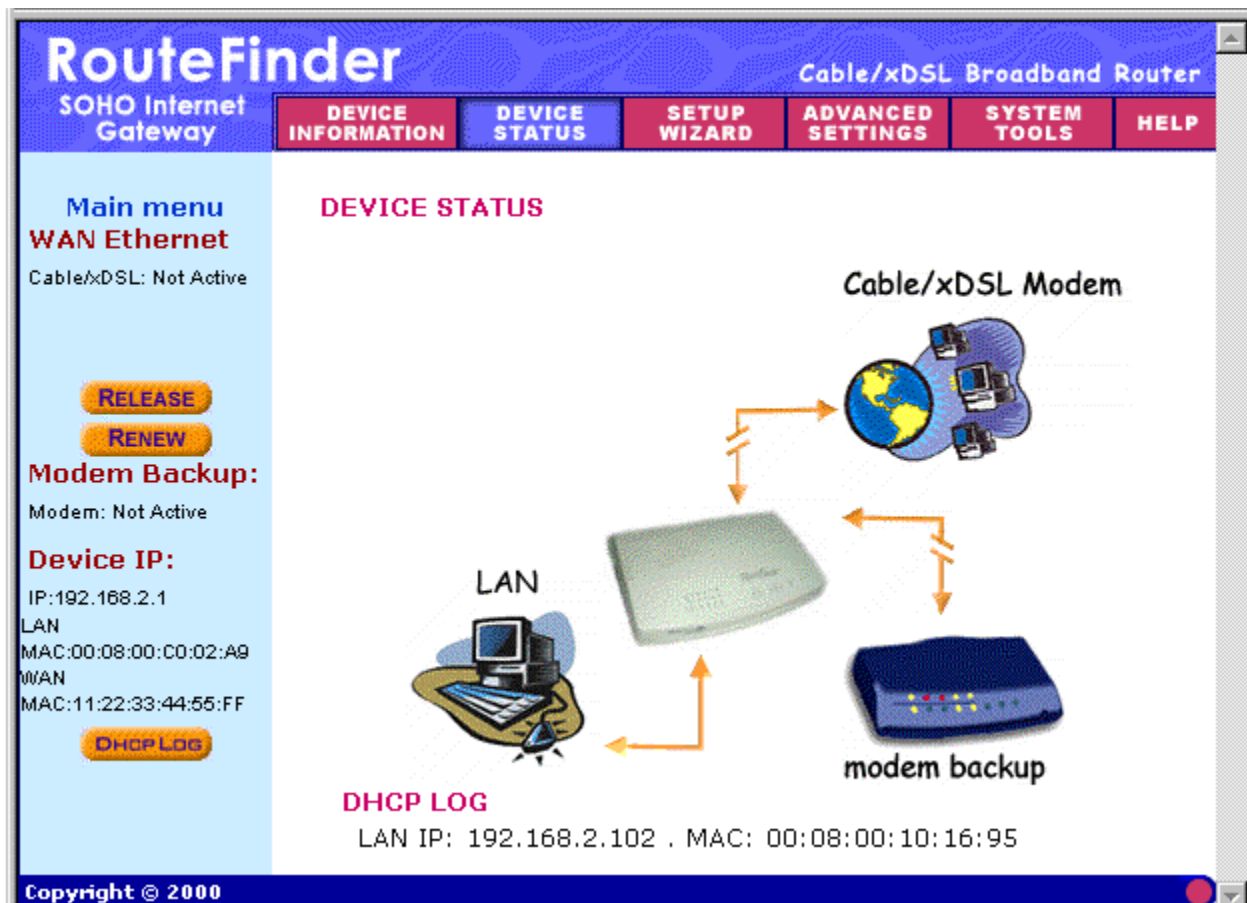
Release Button – Click to disconnect the Cable/xDSL modem from the RF500S.

Renew Button – Click to re-connect the Cable/xDSL modem to the RF500S.

Modem Backup – A modem can be used as a dialup backup for the Cable/xDSL modem. If this modem is the current connection, the screen displays a message **Modem: Active**.

Device IP - Shows the Device IP address, private LAN MAC address, and public WAN MAC address of the home Internet gateway.

DHCP Log Button – Click this button to view the current DHCP client information. The log will display at the bottom of the screen.



Advanced Settings

ADVANCED SETTINGS

Click the **Advanced Settings** button. The DHCP screen displays.

The **Advanced Settings** options will establish DHCP server settings, virtual server settings, a static routing table, dynamic settings, modem string settings, administrative settings.

DHCP Server Settings

The **DHCP Server** is enabled by default. If you would like to disable it, uncheck the **Enable DHCP Server Functions** box.

IP Address Pool Range - Assign the range of the IP addresses that will automatically be assigned to the clients of your network. The default settings are **192.168.2.2** to **192.168.2.100**.

IP Address Reservation - Assign computers on your network the same static IP address every time the computer is turned on.

The screenshot shows the 'RouteFinder' web interface for a 'Cable/xDSL Broadband Router'. The top navigation bar includes 'SOHO Internet Gateway', 'DEVICE INFORMATION', 'DEVICE STATUS', 'SETUP WIZARD', 'ADVANCED SETTINGS' (highlighted), 'SYSTEM TOOLS', and 'HELP'. A left sidebar contains a 'Main menu' with buttons for 'DHCP SERVER SETTINGS' (highlighted), 'VIRTUAL SERVER SETTINGS', 'STATIC ROUTING', 'DYNAMIC ROUTING', 'FILTER SETTINGS', 'MODEM STRING SETTINGS', and 'ADMINISTRATION SETTINGS'. The main content area is titled 'DHCP SERVER SETTINGS' and contains the following options:

- ☒ **Enable DHCP Server Functions**
- IP Address Pool Range**
From: 192.168.2.
To: 192.168.2.
- IP Address Reservation**
MAC Address: : : : : :
IP Address: 192.168.2.
- A table with columns: Del, MAC Address, IP Address.
-

**ADVANCED
SETTINGS****– Virtual Server Settings**

To access this screen, click the **Virtual Server Settings** button on the left side of the screen. This option allows clients on the Internet to access your LAN via the Internet. You can use the IP mapping function to access an FTP server or Telnet server, etc. on your LAN via your ISP Internet connection.

If applicable, enter a DMZ address.

Enter the Internal IP number and the Service Port Range for each client. See the **Typical Applications** examples.

Click the **Submit** button when finished.

RouteFinder

SOHO Internet Gateway

Cable/xDSL Broadband Router

[DEVICE INFORMATION](#)
[DEVICE STATUS](#)
[SETUP WIZARD](#)
[ADVANCED SETTINGS](#)
[SYSTEM TOOLS](#)
[HELP](#)

Main menu

[DHCP SERVER SETTINGS](#)
[VIRTUAL SERVER SETTINGS](#)
[STATIC ROUTING](#)
[DYNAMIC ROUTING](#)
[FILTER SETTINGS](#)
[MODEM STRING SETTINGS](#)
[ADMINISTRATION SETTINGS](#)

VIRTUAL SERVER SETTINGS

DMZ 192.168.2.

	Internal IP	Service Port Range	
01.	192.168.2. 0	0	~ 0
02.	192.168.2. 0	0	~ 0
03.	192.168.2. 0	0	~ 0
04.	192.168.2. 0	0	~ 0
05.	192.168.2. 0	0	~ 0
06.	192.168.2. 0	0	~ 0
07.	192.168.2. 0	0	~ 0
08.	192.168.2. 0	0	~ 0
09.	192.168.2. 0	0	~ 0
10.	192.168.2. 0	0	~ 0
11.	192.168.2. 0	0	~ 0
12.	192.168.2. 0	0	~ 0
13.	192.168.2. 0	0	~ 0
14.	192.168.2. 0	0	~ 0
15.	192.168.2. 0	0	~ 0
16.	192.168.2. 0	0	~ 0

[SUBMIT](#)

NOTE: Please click 'Submit' to enter inputted data.

FTP	20,21
Telnet	23
SMTP	25
DNS	53
TFTP	69
HTTP	80
POP3	110
News	144
SNMP	161
SNMP-trap	162

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**ADVANCED
SETTINGS****– Static Routing**

Routing is the process of moving packets of data from source to destination. You can create a routing table to connect your network to another, or to connect subnets within your network.

1. To access this screen, click the **Static Routing** button on the left side of the screen.
2. Enter the details for each entry in the routing table. Click the **Add** button after each entry.

Destination IP Address – The address of the remote network to which you want to assign a static route.

Subnet Mask – The Subnet Mask of your network IP address.

Gateway IP Address – The IP address of the interface used to link to the remote network.

The entries display on the lower half of the screen. To change an entry, click the Delete (**Del**) button, and then re-enter the information.

3. When the table is complete, click the **Submit** button.

RouteFinder Cable/xDSL Broadband Router

SOHO Internet Gateway

DEVICE INFORMATION | DEVICE STATUS | SETUP WIZARD | **ADVANCED SETTINGS** | SYSTEM TOOLS | HELP

Main menu

DHCP SERVER SETTINGS

VIRTUAL SERVER SETTINGS

STATIC ROUTING

DYNAMIC ROUTING

FILTER SETTINGS

MODEM STRING SETTINGS

ADMINISTRATION SETTINGS

STATIC ROUTING TABLE

Destination IP Address : . . .

Subnet Mask : . . .

Gateway IP Address : . . .

Add

Del	Destination LAN IP Address	Subnet Mask	Gateway IP Address

Submit

NOTE: Please click 'Submit' to enter inputted data.

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**ADVANCED
SETTINGS****– Dynamic Routing**

Dynamic Routing is disabled when Static Routing is used. You will have to disable Static Routing in order to choose one of the dynamic routing protocols. The Dynamic Routing protocol adjusts automatically to the changes in the network topology or traffic.

1. To access this screen, click the **Dynamic Routing** button on the left side of the screen. The **Dynamic Settings** screen displays.
2. Click the radio buttons for the **Send** and **Receive** settings desired. To change these settings before submitting them, simply re-check the desired ones.

Send – Choose the protocol you want to use to **transmit** the network data. The recommended setting is **Disable**.

Receive – Choose the protocol you want the RF500S to **receive** network data. The recommended setting is **Disable**.

3. Click the **Submit** button to accept these settings.

RouteFinder Cable/xDSL Broadband Router

SOHO Internet Gateway

DEVICE INFORMATION DEVICE STATUS SETUP WIZARD **ADVANCED SETTINGS** SYSTEM TOOLS HELP

Main menu

DHCP SERVER SETTINGS

VIRTUAL SERVER SETTINGS

STATIC ROUTING

DYNAMIC ROUTING

FILTER SETTINGS

MODEM STRING SETTINGS

ADMINISTRATION SETTINGS

DYNAMIC SETTINGS

SEND ☒ Disable ☐ RIP1 ☐ RIP1 Compatible ☐ RIP2

RECEIVE ☒ Disable ☐ RIP1 Only ☐ RIP2 Only ☐ Both RIP1/2

SUBMIT

NOTE: Please click 'Submit' to enter inputted data.

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**ADVANCED
SETTINGS****– Filter Settings**

The **LAN Filter Settings** function allows the network administrator to define whether local users have the permission to access the Internet.

To access this screen, click the **Filter Settings** button on the left side of the **Advanced Settings** screen.

1. Check the **LAN Side Filter Enabled** box to begin.
2. Select the LAN side filter: **Block** or **Pass**.
3. Select the client filter settings: **Block** or **Pass**.
4. Select the protocol to be used from the **Protocol** drop-down list box.
5. Enter the client **IP Address Range** and **Destination Port Range**.
6. Click the **Add** button. The entry displays on the lower part of the screen.
7. Continue adding table entries. When complete, click the **Submit** button.

Example - To prevent the local users in IP address range 101 to 200 from accessing port 80 (HTTP), set up the following parameters:

LAN Side Filter Enabled: Enabled	Protocol: TCP
Default LAN Side Filter: Pass	IP Address Range: 101 - 200
Filter: Block	Destination Port Range: 80 - 80 (HTTP)

RouteFinder Cable/xDSL Broadband Router

SOHO Internet Gateway

DEVICE INFORMATION | DEVICE STATUS | SETUP WIZARD | **ADVANCED SETTINGS** | SYSTEM TOOLS | HELP

Back

LAN FILTER SETTINGS

WAN FILTER SETTINGS

☒ **LAN Side Filter Enabled**

Default LAN Side Filter ☒ Block ☐ Pass

Filter Entry

☒ Block ☐ Pass

Protocols: All

IP Address Range

From: . . .

To: . . .

Destination Port Range: ~

ADD

LAN Side Filter Table:

Del	Type	Protocol	From	To	Port Range
-----	------	----------	------	----	------------

SUBMIT

**ADVANCED
SETTINGS****– WAN Filter Settings**

The **WAN Filter Settings** function allows the network administrator to define whether remote/outside users have the permission to access the local network. To activate, check the **WAN Side Filter Enabled** box. Then define the policy.

1. To access this screen, click the **Filter Settings** button on the left side of the **Advanced Settings** screen. Then click the **WAN Filter Settings**.
2. Check the **WAN Side Filter Enabled** box to begin.
3. Select the WAN side filter: **Block** or **Pass**.
4. Select the client filter settings: **Block** or **Pass**.
5. Select the protocol to be used from the **Protocol** drop-down list box.
6. Enter the client **IP Address Range** and **Destination Port Range**.
7. Click the **Add** button. The entry displays on the lower part of the screen.
8. Continue adding table entries. When complete, click the **Submit** button.

The screenshot shows the 'RouteFinder' web interface for a 'Cable/xDSL Broadband Router'. The top navigation bar includes 'SOHO Internet Gateway' and buttons for 'DEVICE INFORMATION', 'DEVICE STATUS', 'SETUP WIZARD', 'ADVANCED SETTINGS' (selected), 'SYSTEM TOOLS', and 'HELP'. On the left sidebar, there are buttons for 'Back', 'LAN FILTER SETTINGS', and 'WAN FILTER SETTINGS' (selected).

The main content area is titled 'WAN Filter Settings'. It features a checkbox labeled 'WAN Side Filter Enabled' which is checked. Below this, there are radio buttons for 'Default WAN Side Filter' with 'Block' selected and 'Pass' unselected.

The 'Filter Entry' section contains:

- Radio buttons for 'Block' (selected) and 'Pass'.
- A 'Protocols' dropdown menu currently set to 'All'.
- 'IP Address Range' fields with 'From' and 'To' sub-fields, each consisting of four input boxes for IP octets.
- 'Destination Port Range' fields with two input boxes separated by a tilde (~).
- An orange 'ADD' button.

Below the filter entry section is a 'WAN Side Filter Table' with the following header row:

Del	Type	Protocol	From	To	Port Range
(Empty table body)					

 An orange 'SUBMIT' button is located at the bottom of the page.

**ADVANCED
SETTINGS****- Modem String Settings**

Use the **Modem String Settings** screen to establish settings for your modem and to set the baud rate.

1. To access this screen, click the **Modem String Settings** button on the left side of the **Advanced Settings** screen. The **Modem Settings** screen displays.
2. Select the baud rate from the drop-down list box. If you want to change the baud rate, check the initial string. Refer to the manual that accompanied your modem or TA.
3. Enter the Pre-Initial, Initial, and Dialup Strings.
4. When finished, click the **Submit** button to accept these settings.

The screenshot displays the 'RouteFinder' web interface for a 'Cable/xDSL Broadband Router'. The top navigation bar includes 'SOHO Internet Gateway' and several tabs: 'DEVICE INFORMATION', 'DEVICE STATUS', 'SETUP WIZARD', 'ADVANCED SETTINGS' (which is active), 'SYSTEM TOOLS', and 'HELP'. On the left, a 'Main menu' sidebar contains buttons for 'DHCP SERVER SETTINGS', 'VIRTUAL SERVER SETTINGS', 'STATIC ROUTING', 'DYNAMIC ROUTING', 'FILTER SETTINGS', 'MODEM STRING SETTINGS' (highlighted in red), and 'ADMINISTRATION SETTINGS'. The main content area is titled 'MODEM SETTINGS' and contains the following fields:

- Baudrate Settings :** A dropdown menu currently showing '115200bps(28.8K/33/6K/56K modem or ISDN TA)'.
- Pre-Initial String:** A text input field containing 'AT'.
- Initial String:** A text input field containing 'AT S0=1'.
- Dialup String:** A text input field containing 'ATDT'.

Below these fields is an orange 'SUBMIT' button. At the bottom of the main area, a note states: 'NOTE: Please click 'Submit' to enter inputted data.'

**ADVANCED
SETTINGS****– Administrative Settings**

Use this screen to change your RF500S password, set the HTTP port number, set remote user configuration, and establish system log settings.

1. To access this screen, click the **Administrative Settings** button on the left side of the **Advanced Settings** screen.
2. **Password:** To set a new password, type the new one in the **New Password** box and re-type it for verification in the **Retype Password** box. If you do not want to change any other item on this screen, click the **Submit** button to accept the password change.

Important: It is important to remember your password. If for any reason you lose or forget it, press the small reset button on the back of the RF500S. Hold the reset button until the serial LEDs of the RF500S blink, and then release the reset button. This reset action will re-initialize the settings. However, all configurations, including the password, will be reset. You will have to reconfigure all of your RF500S settings.

3. **System Administration:** The settings in this portion of the screen can be used to give a remote user(s) the ability to configure and administrate the RF500S through the Internet. The default IP address of the remote administration host is **0.0.0.0**. This address means that any remote user can access and manage the RF500S.

HTTP Port Number: The default value is 80.

Allow Remote User to Configure the Device Check Box: To give remote users the ability to configure and administrate the RF500S, you have to check this box.

IP Address: Type the RF500S WAN IP address into the browser of any or a specific PC on the network.

<http://192.168.100.1:1023>

[http://<WAN IP Address>: <Port Number>](http://<WAN IP Address>:<Port Number>)

Important: Once the HTTP port number (**NOT Port 80**) is changed and the users of the LAN terminal want to configure the RF500S, the users have to type the LAN IP address **with** the port number: 192.168.2.3.:1023

4. If you want to allow a remote user to **PING** the device, check the corresponding box. See information about PING in the Appendix in the complete User Guide.
5. If you want to enable the system log function, check the corresponding box, and enter the **Log Server IP Address**.
6. If you want enable a **Detail Debug IPsec Log**, check the corresponding box.

7. When you have completed the screen, click the **Submit** button.

The screenshot shows a web browser window titled "Advanced Settings - Password Settings - Microsoft Internet Explorer". The address bar shows "http://192.168.2.1/adv_password.htm". The page has a blue header with "RouteFinder" and "Cable/xDSL Broadband Router". Below the header is a navigation bar with tabs: "DEVICE INFORMATION", "DEVICE STATUS", "SETUP WIZARD", "ADVANCED SETTINGS" (selected), "SYSTEM TOOLS", and "HELP". On the left is a "Main menu" with buttons for "DHCP SERVER SETTINGS", "VIRTUAL SERVER SETTINGS", "STATIC ROUTING", "DYNAMIC ROUTING", "FILTER SETTINGS", "MODEM STRING SETTINGS", and "ADMINISTRATION SETTINGS" (highlighted in red). The main content area is titled "PASSWORD SETTINGS" and contains the text: "The new password will be used to authenticate the user when configuring the device." Below this are two input fields: "New Password:" and "Retype Password:". Underneath is a section titled "SYSTEM ADMINISTRATION" with an "HTTP Port No:" field set to "80". There are two checkboxes: "Allow remote user to configure the device" (unchecked) and "Allow remote user to ping the device" (checked). Below the first checkbox is a "Remote administration host" section with an "IP Address:" field showing "0 . 0 . 0 . 0". Underneath is a "SYSTEM Log" section with an "Enable System Log Function" checkbox (unchecked) and a "Log server IP address" field showing "0 . 0 . 0 . 0". At the bottom is a "Miscellaneous" section with a checked checkbox "Force to reconnect PPPoE if packets can not Send/Receive from PPPoE connection". A large orange "SUBMIT" button is at the bottom right of the form area. The browser's status bar at the bottom shows "Internet".

Advanced Settings - Password Settings - Microsoft Internet Explorer

Address http://192.168.2.1/adv_password.htm Links

RouteFinder Cable/xDSL Broadband Router

SOHO Internet Gateway

DEVICE INFORMATION DEVICE STATUS SETUP WIZARD **ADVANCED SETTINGS** SYSTEM TOOLS HELP

Main menu

DHCP SERVER SETTINGS

VIRTUAL SERVER SETTINGS

STATIC ROUTING

DYNAMIC ROUTING

FILTER SETTINGS

MODEM STRING SETTINGS

ADMINISTRATION SETTINGS

PASSWORD SETTINGS

The new password will be used to authenticate the user when configuring the device.

New Password:

Retype Password:

SYSTEM ADMINISTRATION

HTTP Port No:

☐ Allow remote user to configure the device

Remote administration host

IP Address: . . .

☒ Allow remote user to ping the device

SYSTEM Log

☐ Enable System Log Function

Log server IP address . . .

Miscellaneous

☒ Force to reconnect PPPoE if packets can not Send/Receive from PPPoE connection

SUBMIT

Internet

System Tools

SYSTEM TOOLS

Click the **Systems Tools** button on the main screen. The **Intruder Detection Log** displays first.

System Tools allow you to view the Intruder Detection Log, the Routing Table, and a System Diagnosis screen. You can also choose to save your settings, load the RF500S default settings, upgrade firmware, and reset the device.

SYSTEM TOOLS

– Intruder Detection Log

The event messages show the possible hacker attacks that have occurred on your Internet gateway. Up to 32 hacker attacks may be logged in this manner.

The screenshot shows the RouteFinder web interface for a Cable/xDSL Broadband Router. The main menu on the left includes buttons for Intruder Detection Log, Display Routing Table, System Diagnostics, Save Settings, Load Settings, Upgrade Firmware, and Reset Device. The top navigation bar includes links for Device Information, Device Status, Setup Wizard, Advanced Settings, System Tools, and Help. The Intruder Detection Log table shows two entries of Login Fail events.

Index	Time	Protocol	Source IP (Port)	Dest IP (Port)	Event
(1)	0/0/0 0:0:0	IP	192.168.2.102 (1057)	192.168.2.1 (80)	Login Fail:
(2)	0/0/0 0:0:0	IP	192.168.2.102 (1060)	192.168.2.1 (80)	Login Fail:

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**SYSTEM
TOOLS****– Display Routing Table**

This table shows the current routing configuration that you setup on the Routing Table screen.

1. To access this screen, click the **Display Routing Table** button from the **System Tools** screen. The **Display Routing Table** screen displays.
2. To exit this screen, select another button on the left side of the screen.

The screenshot shows the RouteFinder web interface. The top header is blue with 'RouteFinder' in large white text and 'Cable/xDSL Broadband Router' in smaller white text. Below the header is a navigation bar with buttons: 'SOHO Internet Gateway', 'DEVICE INFORMATION', 'DEVICE STATUS', 'SETUP WIZARD', 'ADVANCED SETTINGS', 'SYSTEM TOOLS' (highlighted), and 'HELP'. On the left side, there is a 'Main menu' section with buttons: 'INTRUDER DETECTION LOG', 'DISPLAY ROUTING TABLE' (highlighted), 'SYSTEM DIAGNOSTICS', 'SAVE SETTINGS', 'LOAD SETTINGS', 'UPGRADE FIRMWARE', and 'RESET DEVICE'. The main content area is titled 'DISPLAY ROUTING TABLE' in green. It contains a table with the following data:

Type	Destination LAN IP Address	Subnet Mask	Gateway IP Address	Hop Count
INTF	192.168.2.0	255.255.255.0	192.168.2.1	1

At the bottom left, it says 'Copyright © 2000'.

**SYSTEM
TOOLS****– System Diagnosis**

When selected, the **System Diagnosis** function performs a check-up on your RF500S to make sure that everything is functioning properly.

RouteFinder Cable/xDSL Broadband Router

SOHO Internet Gateway

DEVICE INFORMATION **DEVICE STATUS** **SETUP WIZARD** **ADVANCED SETTINGS** **SYSTEM TOOLS** **HELP**

Main menu

- INTRUDER DETECTION LOG
- DISPLAY ROUTING TABLE
- SYSTEM DIAGNOSTICS**
- SAVE SETTINGS
- LOAD SETTINGS
- UPGRADE FIRMWARE
- RESET DEVICE

SYSTEM DIAGNOSIS

Configuration

Firmware Version: V4.59

ISP Settings

IP assigned method: Assigned by PPPoE server
 IP address: 0.0.0.0
 Gateway IP address: 0.0.0.0
 DNS Server IP address: 200.167.20.4
 Host Name: RF500S
 PPPoE Enable : Yes
 PPPoE Username:

Modem Settings

Telephone Number:
 Dial-up User Name:
 Idle Timeout: 30 minutes
 Pre Initial String: AT
 Initial String: AT S0=1
 Dialup String: ATDT

Device Settings

Device IP address as: 192.168.2.1
 Device Network Mask: 255.255.255.0
 DHCP Server: Enabled
 Pool from: 192.168.2.2
 Pool to: 192.168.2.100

Diagnosis

ISP Status

Cable / xDSL IP address: 0.0.0.0
 DNS IP address: 0.0.0.0
 Modem (async) IP address: 0.0.0.0

Link Status

Cable/xDSL	Disconnected
LAN	Connected
Modem	Modem is Not Ready

Current WAN connection

Cable/xDSL	Not Connected
------------	---------------

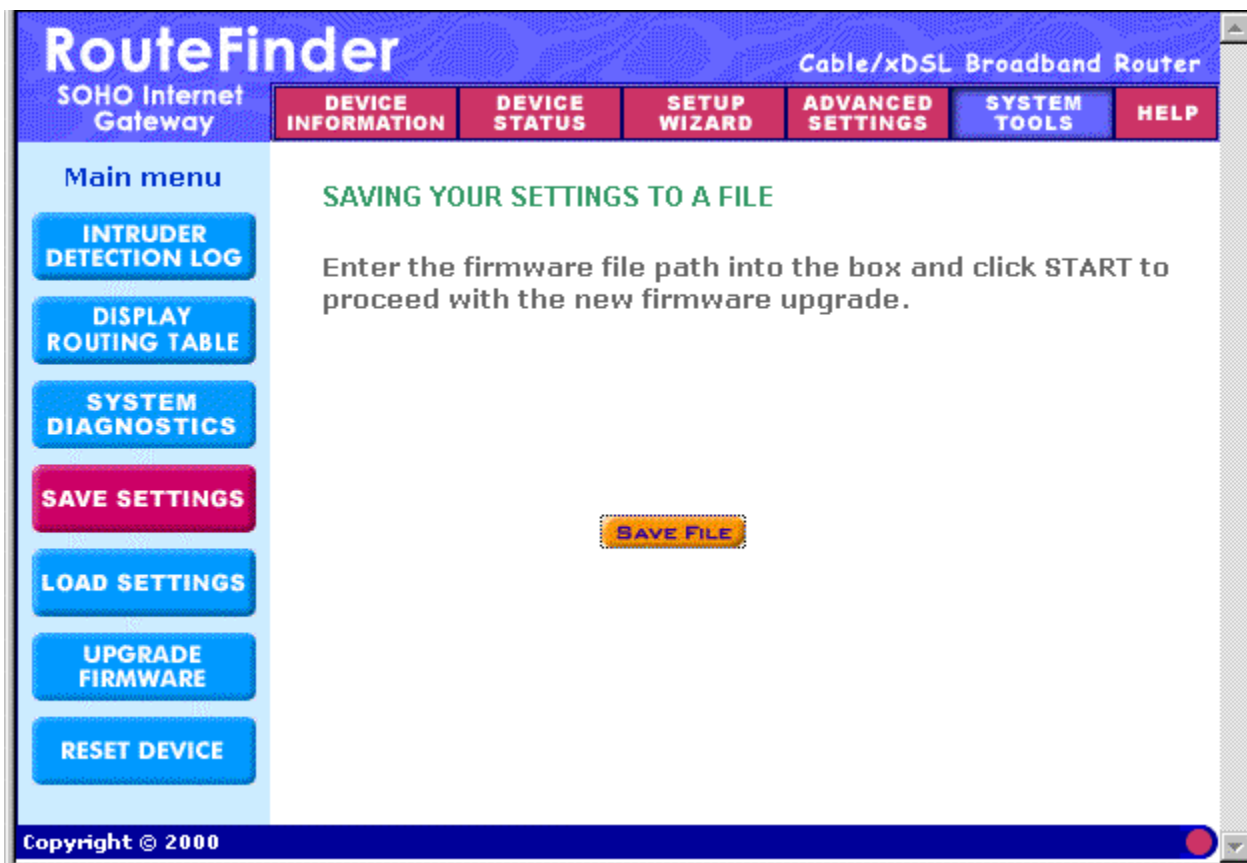
LAN MAC Table

WAN MAC Table

**SYSTEM
TOOLS****– Saving Your Settings to a File**

Use this screen to save your configuration settings to a file. This will provide a backup of your settings in case, for some reason, you have to reset your RF500S.

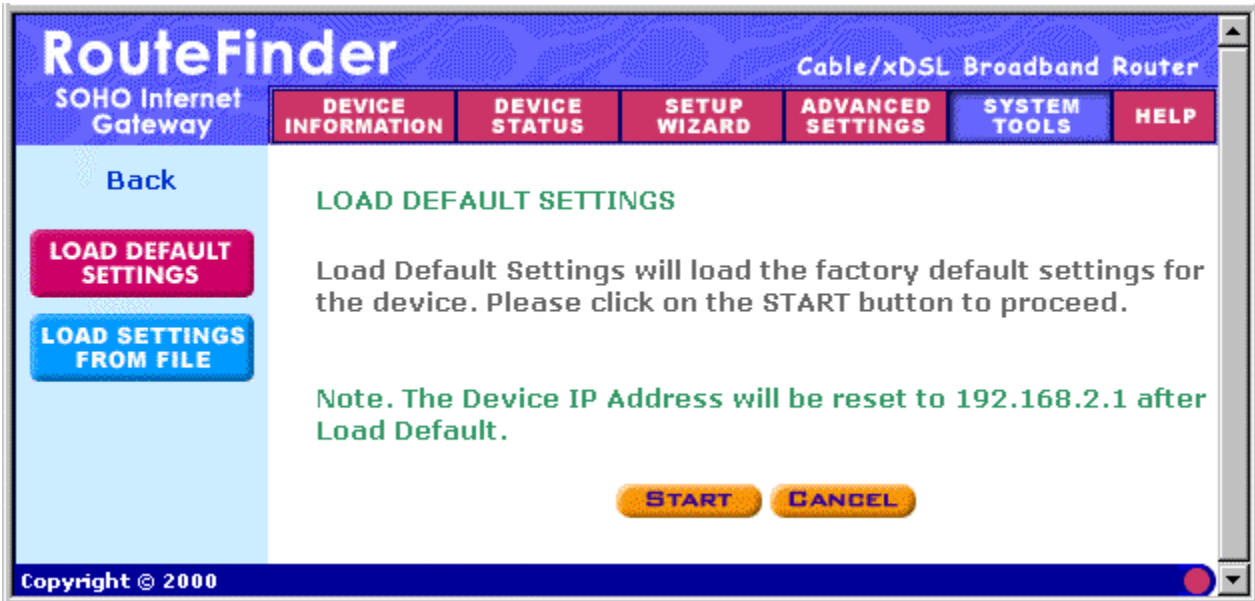
1. Click the **Save File** button in the center of the screen.
2. Then click **Save This File to Disk** in the browsing wizard.



**SYSTEM
TOOLS****– Load Default Settings**

Use this screen to load the original RF500S factory defaults.

1. To access this screen, click the **Load Default Settings** button from the **System Tools** screen. The **Load Default Settings** screen displays.
2. Click the **Start** button to load the default settings.

**SYSTEM
TOOLS****– Load Settings from a File**

1. To load settings from a file, click the **Load Settings From File** button. The screen displays.
2. Select the browse button to locate the file.
3. When the file is located, click the **Start** button.

The screenshot shows the 'RouteFinder' web interface for a 'SOHO Internet Gateway' and 'Cable/xDSL Broadband Router'. The top navigation bar includes links for 'DEVICE INFORMATION', 'DEVICE STATUS', 'SETUP WIZARD', 'ADVANCED SETTINGS', 'SYSTEM TOOLS', and 'HELP'. The left sidebar contains a 'Back' link and two buttons: 'LOAD DEFAULT SETTINGS' and 'LOAD SETTINGS FROM FILE'. The main content area is titled 'LOAD SETTINGS' and contains the instruction: 'Click Load Settings to load settings from a saved file.' Below this, there is a 'Load Settings File:' label, a text input field, a 'Browse...' button, and a yellow 'START' button. The footer indicates 'Copyright © 2000'.

RouteFinder
SOHO Internet Gateway

Cable/xDSL Broadband Router

DEVICE INFORMATION | DEVICE STATUS | SETUP WIZARD | ADVANCED SETTINGS | SYSTEM TOOLS | HELP

Back

LOAD DEFAULT SETTINGS

LOAD SETTINGS FROM FILE

LOAD SETTINGS

Click Load Settings to load settings from a saved file.

Load Settings File: Browse...

START

Copyright © 2000

**SYSTEM
TOOLS****– Upgrade Firmware**

The **Upgrade Firmware** option allows you to upgrade the newest firmware to your RF500S.

How will I be notified of new router firmware upgrades?

All Multi-Tech firmware upgrades are posted on the Multi-Tech Web site at www.multitech.com, where they can be downloaded for free.

Your RouterFinder does NOT need the latest firmware upgrade if your Internet connection is already successful, as firmware upgrades will not increase your connection speed or enhance your Router's performance.

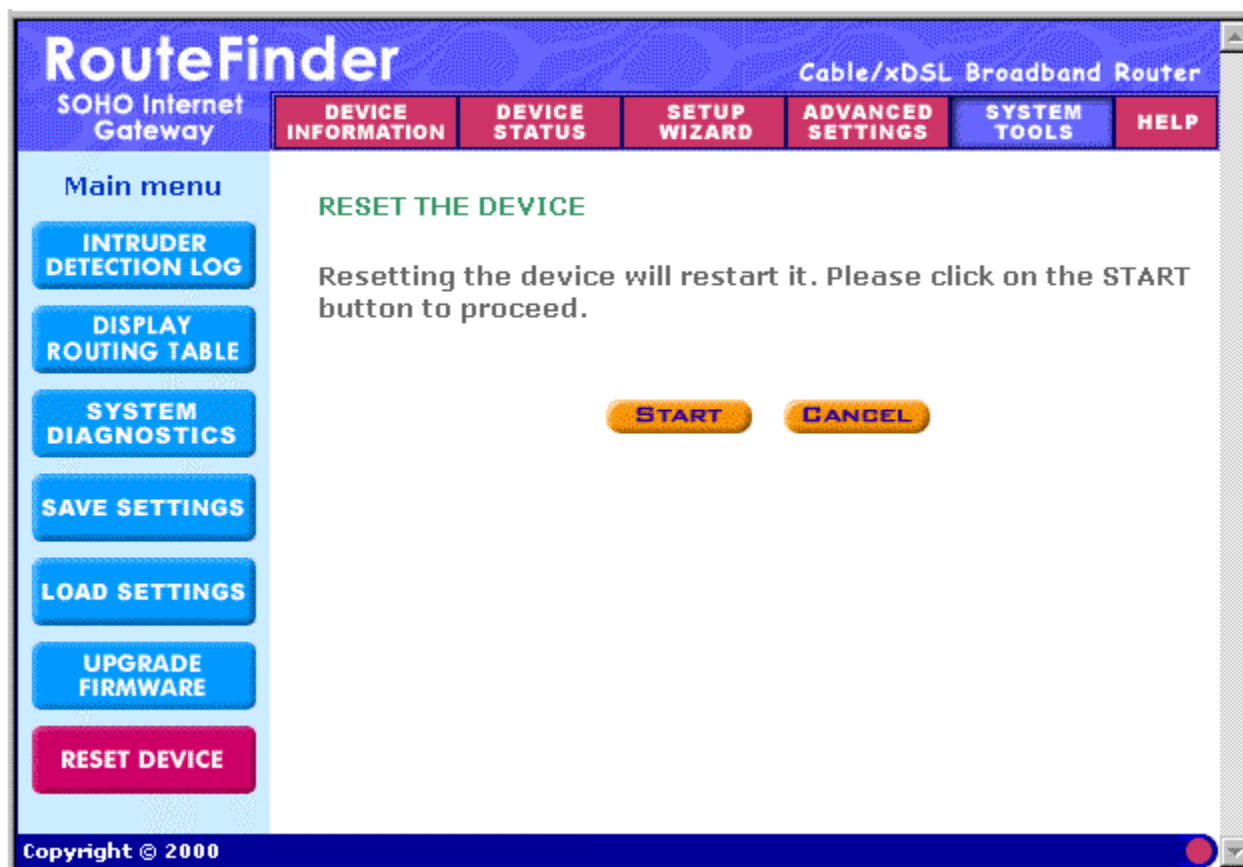
1. To access this screen, click the **Upgrade Firmware** button from the **System Tools** screen. The **Upgrade Firmware** screen displays.
2. Use the browse button to locate the file.
3. Click the **Start** button.
4. To exit this screen, select another option or return to the Main Menu.

The screenshot shows the RouteFinder web interface. At the top, the title "RouteFinder" is displayed in large blue letters, with "Cable/xDSL Broadband Router" in smaller text to the right. Below the title, there is a navigation bar with several tabs: "SOHO Internet Gateway", "DEVICE INFORMATION", "DEVICE STATUS", "SETUP WIZARD", "ADVANCED SETTINGS", "SYSTEM TOOLS", and "HELP". The "SYSTEM TOOLS" tab is currently selected. On the left side, there is a "Main menu" with several buttons: "INTRUDER DETECTION LOG", "DISPLAY ROUTING TABLE", "SYSTEM DIAGNOSTICS", "SAVE SETTINGS", "LOAD SETTINGS", "UPGRADE FIRMWARE" (which is highlighted in red), and "RESET DEVICE". The main content area is titled "FIRMWARE UPGRADE" in green. It contains the instruction: "Enter the firmware file path into the box and click START to proceed with the new firmware upgrade." Below this instruction, there is a text input field labeled "Firmware Upgrade File:" followed by a "Browse..." button. Below the input field and button, there is a large orange "START" button. At the bottom of the interface, there is a footer that reads "Copyright © 2000".

**SYSTEM
TOOLS****– Reset Device**

Resetting the device will restart it.

1. To access this screen, click the **Reset Device** button from the **System Tools** screen. The **Reset Device** screen displays.
2. Click on the **Start** button to reset the device. Hold the reset button until the serial LEDs of the RF500S blink, and then release the reset button.



Multi-Tech Systems, Inc. Warranty

Multi-Tech Systems, Inc., (hereafter "MTS") warrants that its products will be free from defects in material or workmanship for a period of two, five, or ten years (depending on model) from date of purchase, or if proof of purchase is not provided, two, five, or ten years (depending on model) from date of shipment.

MTS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

This warranty does not apply to any products which have been damaged by lightning storms, water, or power surges or which have been neglected, altered, abused, used for a purpose other than the one for which they were manufactured, repaired by Customer or any party without MTS's written authorization, or used in any manner inconsistent with MTS's instructions.

MTS's entire obligation under this warranty shall be limited (at MTS's option) to repair or replacement of any products which prove to be defective within the warranty period or, at MTS's option, issuance of a refund of the purchase price. Defective products must be returned by Customer to MTS's factory – transportation prepaid.

MTS WILL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES, AND UNDER NO CIRCUMSTANCES WILL ITS LIABILITY EXCEED THE PRICE FOR DEFECTIVE PRODUCTS.

Note: See the User Guide for the entire Multi-Tech Systems, Inc. Warranty and Repairs Policies statement.

Patents

This device is covered by one or more of the following patents:

6,219,708; 6,031,867; 6,012,113; 6,009,082; 5,905,794; 5,864,560;
5,815,567; 5,815,503; 5,812,534; 5,809,068; 5,790,532; 5,764,628;
5,764,627; 5,754,589; D394,250; 5,724,356; 5,673,268; 5,673,257;
5,644,594; 5,628,030; 5,619,508; 5,617,423; 5,600,649; 5,592,586;
5,577,041; 5,574,725; D374,222; 5,559,793; 5,546,448; 5,546,395;
5,535,204; 5,500,859; 5,471,470; 5,463,616; 5,453,986; 5,452,289;
5,450,425; D361,764; D355,658; D355,653; D353,598; D353,144;
5,355,363; 5,355,365; 5,309,562; 5,301,274. Other Patents Pending



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